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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yuriy Sergeevich Volkov

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MCKEE, VOORHEES & SEASE, P.L.C.

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SUITE 3200

DES MOINES, IA 50309-2721

EXAMINER

WALTERS JR, ROBERT S

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,518	Applicant(s) VOLKOV ET AL.	
	Examiner ROBERT S. WALTERS JR	Art Unit 4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-28 is/are rejected.
- 7) ☒ Claim(s) 25-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-28 are pending. Claims 1-20 are withdrawn as being drawn to a non-elected species. Claims 21-28 are presented for examination.

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, drawn to a method of lengthy product surface treatment.

Group II, claim(s) 9-20, drawn to a line for applying a coating on a lengthy product.

Group III, claim(s) 21-28, drawn to a device for applying a coating on a lengthy product.

PCT:Lack of Unity Posteriori

Lack of unity of invention may be may only become apparent “a posteriori,” that is, after taking the prior art into consideration, in the case of independent claims to A + X and A + Y, unity of invention(i.e. species) is present a posteriori as A is common to both claims.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature which is referred to Annex B of Appendix A1 of the MPEP(Administrative Instructions under the PCT, “Unity of Invention”). The express “special technical features” is defined as meaning those technical

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features that define a contribution which each of the inventions, considered as a whole, makes over the prior art.”(Rule 13.2). Unity exists only when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding claimed special technical features. In this case, the technical feature shared by each invention is the method of coating.

The question of unity of invention has been reconsidered retroactively by the examiner in view of the search performed; a review of U.S. Pat. No. 5860204 (Krengel et al.), makes clear that the inventions of the groups I-III lack the same or corresponding special technical feature because the cited reference(s) appear to demonstrate that the claimed technical feature does not define a contribution which each of the inventions, considered as a whole, makes over the prior art. Accordingly, the prior art of the record supports restriction of the claimed subject matter to the groups as mentioned immediately above.

Election

During a telephone conversation with Wendy Marsh on 4/15/2008 a provisional election was made without traverse to prosecute the invention of the device for applying coatings on lengthy products, claims 21-28. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed;

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(3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Specification

Abstract

The abstract of the disclosure is objected to because it does not appear on a separate sheet by itself. Correction is required. See MPEP § 608.01(b).

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title change is due to the requirement for restriction which changes the scope of the application.

Claim Objections

Claims 25-28 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend on another multiple dependent claim. See MPEP § 608.01(n). For examination purposes, claims 25-28 have been treated as being dependent upon claim 21.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 21-24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krengel et al. (U.S. Pat. No. 5860204) in view of Chandley (U.S. Pat. No. 5042561).

Claim 21 is drawn to a device for applying coatings on lengthy products by plunging them into a tank with melt and camera for applying coating with input and output passages, wherein camera is provided in its lower part with an intake vertical passage plunged into tank with melt, camera for applying the coating and tank with melt provided with means for creating pressure discharge and excessive pressure correspondingly in camera and tank, and in the output passage and right after it there is a device for melt excesses removing from the surface of lengthy product.

Krengel et al. teach a device for applying a coating of zinc on a tube (abstract) wherein the device has a housing comprising a lower reservoir (comparable to the melt tank) and a galvanizing tank (comparable to the camera) which has input and output passages for the tube, the tank is further comprised with a vertical passage to the lower reservoir that is operated by a pump to move the molten zinc from the lower reservoir to the tank, with the output passage having a nitrogen seal and potentially a shaping apparatus that would inherently remove excess melt from the surface of the product (column 9, lines 12-40).

Krengel et al. is silent on the lower reservoir and galvanizing tank having means for creating pressure discharge and excessive pressure correspondingly in camera and tank.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Krengel et al. with Chandley as Chandley teach a device for transporting a molten metal into a cast above a lower reservoir (abstract) by applying pressure to the lower reservoir (claim 14) while evacuating the mold (claim 2). Thus, the pump of Krengel et al. could be substituted for the pressure actuated filling as disclosed by Chandley. One would have been motivated to make this modification as it is simply a matter of substituting a well known technique of transporting molten metal in this case in a low-pressure die casting system to a base device as disclosed by Krengel et al. It would have been obvious to one of ordinary skill in the art that this modification would yield a predictable result of a simplified system that no longer requires a mechanical pump. Further, gas outlets are already disclosed in the Krengel et al. device (column 9, lines 12-40) that could be adapted for this purpose.

Claim 22 is drawn to the device of claim 21 wherein the coated lengthy product is one of the following: wire, bar, steel band, steel rolled product. As disclosed, all the limitations of claim 21 are taught by Krengel et al. in view of Chandley. Further, Krengel et al. teach that their device is used for coating a steel tube (column 5, lines 8-10).

Claim 23 is drawn to the device of any one claims 21-22 wherein the camera for applying the coating is placed above the tank with melt, and camera and tank are provided with melt heating means. All the limitations of claim 21 and 22 are taught by Krengel et al. in view of Chandley, further Krengel et al. teach a galvanizing tank containing both what constitutes the camera and tank of claim 21 which is maintained at a temperature of about 850 °F to keep the

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zinc molten (column 9, lines 12-14), further Krengel et al. disclose that a lower molten reserve (tank) sits below an upper chamber (the camera) (see column 10, lines 52-54).

Claim 24 is drawn to the device of any one of claims 21-22 wherein the camera for applying the coating the following condition is maintained that $P_{at} \geq P_1 + P_{m.col}$. As discussed Krengel et al. and Chandley teach all the limitations of claim 21-22, further Krengel et al. teach that the pressure in the heat chamber (in this case the heat chamber can be considered atmospheric pressure as it is what is directly outside of the galvanizing chamber) is greater than the pressure in the housing (which is the pressure of the tank combined with the pressure of the camera) thus avoiding leak back of oxidizing gas into the heat chamber from the galvanizing housing (column 9, lines 56-69).

Claim 26 is a multiple dependent claim dependent on another multiple dependent claim, so for examining purposes claim 26 has been considered as dependent on claim 21. Claim 26 is drawn to the device of claim 21 wherein the side walls of the camera for applying the coating have input and output passages for transporting the treated product. As discussed, all the limitations of claim 21 are taught by Krengel et al. in view of Chandley, and further Krengel et al. teach a device where the input and output passages are on the side walls of the camera, see Figure 7 where the input is junction "216" and the output is junction "232".

Claim 27 is a multiple dependent claim dependent on another multiple dependent claim, so for examining purposes claim 27 has been considered as dependent on claim 21. Claim 27 is

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drawn to the device of claim 21 wherein the upper part of the cover of the camera has an outlet for pressure discharge in the hollow over the metal level and in wall of tank there is an inlet through which excessive pressure in the melt tank is created. As disclosed, claim 21 is taught by Kregel et al. in view of Chandley. Further, Chandley teaches that the pumping mechanism for molten metal can be accomplished by a device where there is an outlet "16a" in Figure 1 for allowing pressure discharge above a reservoir, while having a means for creating pressure in the lower tank by outlet "88" in Figure 1.

Claim 28 is a multiple dependent claim dependent on another multiple dependent claim, so for examining purposes claim 28 has been considered as dependent on claim 21. Claim 28 is drawn to the method of claim 21 wherein the device for melt excess removal from the surface of the lengthy product is MGD-remover or a gasket made from fireproof material. As disclosed, all the limitations of claim 21 are taught by Kregel et al. in view of Chandley. Further, Kregel et al. teach the use of a nitrogen seal (equivalent to a gasket, column 9, lines 35-39) that the tube passes through as it leaves the galvanizing tank which would inherently remove any excess melt, further it would inherently be fireproof as it is expected to be continuously contacting molten metal of high temperature.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kregel et al. in view of Chandley and in further view of Pereira (U.S. Pat. No. 4860820).

Claim 25 is a multiple dependent claim dependent on another multiple dependent claim, so for examining purposes claim 25 has been considered as dependent on claim 21. As disclosed Kregel et al. in view of Chandley teach all the limitations of claim 21, however neither reference discloses a means for level control. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kregel et al. and Chandley et al. with Pereira as Pereira teaches the use of a sensor for the detection of when a molten metal reaches a certain level and then means for adjusting the pressure in response to this (abstract). It would have been obvious to apply this sensor system as a level control means in the camera. The prior art contained the base device of Kregel et al. and Pereira disclose the use of a sensor to improve the control of the transport of molten metal and one of ordinary skill would have recognized that the application of this sensor to the system of Kregel et al. would yield a predictably improved system.

Conclusion

Claims 1-28 are pending.

Claims 1-20 are withdrawn.

Claims 21-28 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Thursday, 6:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
April 17, 2008
Examiner, Art Unit 4172

/Vickie Kim/
Supervisory Patent Examiner, Art Unit 4172